

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF ILLINOIS**

Mary Casteel,)	
)	
)	
Plaintiff,)	
)	Case No.:
v.)	
)	<u>JURY TRIAL DEMANDED</u>
SYNGENTA CROP PROTECTION, LLC,)	
SYNGENTA AG, and CHEVRON U.S.A,)	
INC.,)	
)	
Defendants.)	

COMPLAINT

NOW COMES Plaintiff, Mary Casteel by and through her attorneys, PULASKI KHERKHER, PLLC, for her Complaint at Law against Defendants, SYNGENTA CROP PROTECTION, LLC, SYNGENTA AG, and CHEVRON U.S.A., INC., alleges as follows:

Nature of the Case

1. This case arises out of Defendants’ wrongful conduct in connection with the design, development, manufacturing, testing, packaging, promoting, marketing, advertising, distribution, and sale of paraquat dichloride, also known as paraquat methosulfate (“Paraquat”), the active ingredient in herbicide products that cause Parkinson’s Disease (“PD”). As such, Paraquat is dangerous to human health and unfit to be marketed and sold in commerce, particularly without proper warnings and directions as to the dangers associated with its use. Plaintiff, Mary Casteel, was exposed to Paraquat for a sustained period of time and suffered permanent physical injury and pain as a result thereof. This case arises out of Defendants’ wrongful conduct in connection with the design, development, manufacturing, testing, packaging, promoting, marketing, advertising, distribution, and sale of paraquat dichloride, also known as paraquat methosulfate (“Paraquat”), the active ingredient in herbicide products that cause Parkinson’s Disease (“PD”). As such,

Paraquat is dangerous to human health and unfit to be marketed and sold in commerce, particularly without proper warnings and directions as to the dangers associated with its use. Plaintiff, Mary Casteel was exposed to Paraquat for a sustained period of time and suffered permanent physical injury, and pain as a result thereof.

Parties

2. Plaintiff, Mary Casteel, is a natural person (hereinafter “Plaintiff”) now and at all relevant times was a resident of the state of Missouri. Plaintiff, Mary Casteel, brings this action for personal injuries sustained by exposure to the active ingredient Paraquat in Defendants’ Paraquat products.

3. Defendant Syngenta Crop Protection, LLC (“SCP”) is a Delaware limited liability company with its principal place of business in at 410 South Swing Road, Greensboro, North Carolina 27409-2012. SCP is a subsidiary of Syngenta Seeds.

4. SCP advertises, promotes, markets, sells, and distributes Paraquat and other herbicides and pesticides to distributors, dealers, applicators, and farmers in the State of Illinois.

5. Defendant Syngenta AG is a corporation organized and existing under the laws of Switzerland with its principal place of business at Schwarzwaldallee 215, 4058 Basel-Stadt, Switzerland. Syngenta AG was formed in 2000 as a result of the merger of Novartis Agribusiness and Zeneca Agrochemicals. Syngenta AG was a publicly traded company on the Swiss stock exchange; American Depositary Receipts for Syngenta AG were traded on the New York Stock Exchange until it was acquired by ChemChina, a Chinese state-owned entity, in 2017. It has since been de-listed. On information and belief, Syngenta AG continues to operate as a separate unit of ChemChina. Syngenta AG wholly owns, through its ownership of Syngenta Seeds, SCP.

6. Syngenta AG represents itself as a global company. According to Syngenta’s website, Syngenta AG’s Board of Directors “has full and effective control of the company and

holds ultimate responsibility for the company strategy.”

7. One or more members of Syngenta AG’s Board of Directors or the Executive Committee established by the Board of Directors also serve as member(s) of the Board of Directors of SCP and/or Syngenta Seeds.

8. Syngenta AG’s Executive Committee formulates and coordinates the global strategy for Syngenta businesses, and maintains central corporate policies requiring Syngenta subsidiaries, including SCP, to operate under the general guidance of the Syngenta group control.

9. Employees of the Syngenta group maintain reporting relationships that are not defined by legal, corporate relationships, but in fact cross those corporate lines.

10. SCP is subject to additional oversight that requires it to seek approval for certain decisions from higher levels within the functional reporting structure, including, in some instances, Syngenta AG. SCP’s appointments of senior management personnel also may require, in some instances, approval from individuals or governing bodies that are higher than SCP’s board of directors.

11. Syngenta AG maintains a central global finance function that governs SCP, which requires SCP to function under the Syngenta AG umbrella and not independently.

12. In addition, SCP regularly refers to itself as “Syngenta.”

13. Chevron U.S.A., Inc. (“CUSA”) is a Pennsylvania corporation with its principal place of business in San Ramon, California.

Jurisdiction and Venue

Subject Matter Jurisdiction

14. This court has subject matter jurisdiction over this action because diversity exists under 28 U.S.C. § 1332(a)(3).

15. The matter in controversy exceeds the sum or value of \$75,000, exclusive of interest and costs, because Plaintiff seeks an amount that exceeds this sum or value on each of his claims against each Defendant.

16. Complete diversity exists because this is an action between citizens of different states in which a citizen or subject of a foreign state is an additional party, in that:

- a. Plaintiff is a citizen of the state of Missouri.
- b. SCP is a citizen of the States of Delaware and North Carolina.
- c. CUSA is a citizen of the States of Pennsylvania and California.
- d. Syngenta AG is a citizen or subject of the nation of Switzerland.

Personal Jurisdiction

17. This Court has personal jurisdiction over SCP because SCP is a corporation doing business within the State of Illinois. SCP previously sold and continues to sell its Paraquat products throughout the State of Illinois. In addition, SCP maintains sufficient minimum contacts with the State of Illinois such that this Court's exercise of personal jurisdiction over it does not offend traditional notions of fair play and substantial justice. Specific to this case, SCP engaged in the business of developing, manufacturing, testing, packaging, marketing, distributing, and labeling pesticides containing Paraquat in Illinois, as such that filing a lawsuit in Illinois by a person injured by Paraquat is foreseeable. SCP purposefully availed itself of the privilege of conducting activities within the State of Illinois, thus invoking the benefits and protections of its laws.

18. This Court has personal jurisdiction over Syngenta AG because, for the reasons alleged above, the jurisdictional contacts of SCP in this state are attributable to Syngenta AG given of the unusually high degree of control Syngenta AG exercises over its subsidiaries. In addition, Syngenta AG and SCP acted in concert under agreements or other arrangements to act in a collective manner and/or as joint venturers regarding the actions and events made the subject of this Complaint. Syngenta AG and SCP are therefore jointly and severally liable for the acts for which the Plaintiff complains.

19. In the 2011 case of *City of Greenville, Illinois. v. Syngenta Crop Protection, Inc.*, this Honorable Court held that Syngenta AG's unusually high degree of control made Syngenta Crop Protection the agent or alter ego of Syngenta AG, and therefore subjected Syngenta AG to

jurisdiction in the State of Illinois. 830 F. Supp. 2d 550 (S.D. Ill. 2011).

20. This Court has personal jurisdiction over CUSA because CUSA advertises and sells goods, specifically pesticides containing Paraquat, throughout this District of Illinois. It derived substantial revenue from goods and products used in this District. It expected its acts to have consequences within the State of Illinois, including the foreseeable possibility of a lawsuit in Illinois by a person injured by Paraquat, and derived substantial revenue from interstate commerce. CUSA purposefully availed itself of the privilege of conducting activities within the State of Illinois, thus invoking the benefits and protections of its laws.

Venue

21. Venue is proper in this District under 28 U.S.C. § 1391(b)(2) because a substantial part of the events giving rise to the claim occurred in the Southern District of Illinois, as Defendant's alleged wrongful conduct occurred throughout Illinois.

22. Plaintiff had no knowledge and had no way of acquiring knowledge about the risk of serious illness associated with exposure to Paraquat.

23. Within the time period of any applicable statutes of limitations, Plaintiff could not have discovered, through the exercise of reasonable diligence, that exposure to Paraquat is injurious to human health.

24. Plaintiff had no information which would cause a reasonable person to suspect the risks associated with exposure to Paraquat; nor would a reasonable and diligent investigation by Plaintiff have led to discovery that Paraquat would cause or had caused Plaintiff's injuries.

25. Defendants failed to disclose critical safety information about its product Paraquat, and instead consistently made false representations as to the safety of Paraquat, and those false representations prohibited Plaintiff from discovering valuable information which would have prevented this claim.

26. Defendants were under a continuous duty to disclose to consumers, users, and other persons coming into contact with its products, including Plaintiff, accurate safety information concerning its products and the risks associated with the use of and/or exposure to

Paraquat.

27. Defendants knowingly, affirmatively, and actively concealed safety information concerning Paraquat, and the serious risks associated with the use of and/or exposure to its products, including Paraquat.

Factual Allegations

Development of Paraquat

28. The herbicidal properties of Paraquat were discovered by Imperial Chemical Industries PLC (“ICI”) in 1955.¹

29. ICI developed, researched, manufactured, and tested Paraquat through its Central Toxicology Laboratory in the early 1960s and produced the first chemical paraquat formulation, which it registered in England and introduced in certain markets under the brand name GRAMOXONE®, in 1962.

30. ICI was awarded a U.S. patent on herbicide formulations containing paraquat as an active ingredient in 1962.

31. ICI’s Central Toxicology Laboratory performed and submitted the health and safety studies of Paraquat to the United States Department of Agriculture (“USDA”) and the United States Environmental Protection Agency (“EPA”) to secure and maintain the registration of Paraquat and other pesticides for use in the United States.

32. In or around 1964, ICI entered into a licensing and distribution agreement with Chevron Chemical Company (“Chevron”) to sell Paraquat in the United States. Under this ICI-Chevron Agreement, Chevron obtained an exclusive license to the patents and technical information to permit Chevron to formulate, use, and sell Paraquat under the trade name GRAMOXONE® and other names in the United States and to sub-license others to do so. Some form of this agreement remained in effect until September 1986 when ICI paid Chevron for the early termination of its rights under the paraquat licensing and distribution agreement.

¹ Sagar, G.R., *Uses and Usefulness of Paraquat*, 6 Hum. Toxicology 7, 11 (1987).

33. Through a long series of mergers, spin-offs, and related corporate transactions, ownership of ICI's Central Toxicology Laboratory was transferred to Syngenta Ltd., a wholly owned British subsidiary of Syngenta AG. Since that time, Syngenta Ltd.'s Central Toxicology Laboratory has continued to perform and submit health and safety studies to the EPA to secure and maintain the registration of Paraquat and other pesticides in the United States.

34. Through the same long series of mergers, spin-offs, and related corporate transactions, ICI's agrochemical business was transferred to SCP.

35. From approximately September 1986 through the present, Syngenta AG and/or SCP has:

- a. manufactured Paraquat for use as an active ingredient in herbicides formulated and distributed for sale and use in the United States, including in the State of Illinois;
- b. distributed Paraquat for use as an active ingredient in herbicides formulated and distributed for sale and use in the United States, including in the State of Illinois;
- c. formulated Paraquat products distributed for sale and use in the United States, including in the State of Illinois; and
- d. distributed Paraquat products for sale and use in the United States, including in the State of Illinois.

36. Syngenta, through SCP, is now the leading manufacturer of Paraquat, which it sells under the brand name GRAMOXONE®.²

Paraquat Use

37. Paraquat is designed to kill broadleaf weeds and grasses before the planting or emergence of more than 100 field, fruit, vegetable, and plantation crops, to control weeds in orchards, and to desiccate (dry) plants before harvest.

38. Paraquat products are commonly sprayed multiple times per year on the same land, particularly when used to control weeds in orchards or on farms with multiple crops planted

² Press Release, Federal Trade Commission, FTC Requires China National Chemical Corporation and Syngenta AG to Divest U.S. Assets as Condition of Merger (April 4, 2017), <https://www.ftc.gov/news-events/press-releases/2017/04/ftc-requires-china-national-chemical-corporation-syngenta-ag>.

on the same land within a single growing season or year, and such use was as intended, directed, or at least foreseeable.

39. Paraquat is typically sold by Defendants to end-users in the form of a liquid concentrate (and less commonly in the form of granular solids) designed to be diluted with water before or after loading it into the tank of a sprayer and applied by spraying it onto target weeds.

40. Paraquat concentrate is formulated with one or more “surfactants” to increase the ability of the herbicide to stay in contact with the leaf, penetrate the leaf’s waxy surface, and enter into plant cells, and the accompanying instructions typically told end-users to add a surfactant or crop oil (which typically contains a surfactant) before use.

41. Paraquat products are typically applied with a knapsack sprayer, hand-held sprayer, aircraft (*i.e.*, crop duster), truck with a pressurized tank, or tractor-drawn pressurized tank, and such use was as intended, directed, or at least foreseeable.

42. Each year, Paraquat is applied to millions of acres of agricultural crops, including corn, soybeans, wheat, cotton, fruit, vegetables, rice, orchards, grapes, alfalfa, hay, and other crops.

43. At all relevant times, it was reasonably foreseeable that applicators of Paraquat, such as the Plaintiff, and others nearby would be exposed to Paraquat when it was used in its intended, directed, and/or foreseeable manner, including mixing, loading, spraying, or cleaning.

44. At all relevant times it was reasonably foreseeable that users and others nearby would be exposed to Paraquat through contact with skin, breathing it in, and/or ingesting it.

Parkinson’s Disease

45. Parkinson’s disease is a terrible disease classified as a progressive neurodegenerative disorder of the brain that affects primarily the motor system, which is the part of the central nervous system that controls movement.

46. Parkinson’s Disease is now one of the fastest growing neurological diagnoses on the planet.

47. The characteristic symptoms of Parkinson’s disease are its “primary” motor

symptoms: resting tremor (shaking movement when the muscles are relaxed); bradykinesia (slowness in voluntary movement and reflexes); rigidity (stiffness and resistance to passive movement); and postural instability (impaired balance).

48. Parkinson's primary motor symptoms typically result in "secondary" motor symptoms such as freezing of gait; shrinking handwriting; mask-like expression; slurred, monotonous, quiet voice; stooped posture; muscle spasms; impaired coordination; difficulty swallowing; and excess saliva and drooling caused by reduced swallowing movements.

49. Non-motor symptoms are present in most cases, often for years before the primary motor symptoms appear. These non-motor symptoms include but are not limited to loss of or altered sense of smell, constipation, low blood pressure on rising to stand, sleep disturbances, and depression.

50. There is currently no cure for Parkinson's disease. Existing treatments do not slow or stop its progression; such treatments are capable only of temporarily and partially relieving the motor symptoms. These treatments also have unwelcome side effects when utilized on a long-term basis.

51. One of the primary pathophysiological hallmarks of Parkinson's disease is the selective degeneration and death of dopaminergic neurons (dopamine-producing nerve cells) in a part of the brain called the substantia nigra pars compacta ("SNpc").

52. Dopamine is a neurotransmitter (a chemical messenger that transmits signals from one neuron to another neuron, muscle cell, or gland cell) that is critical to the brain's control of motor function (among other things).

53. The death of dopaminergic neurons in the SNpc decreases the production of dopamine.

54. Once dopaminergic neurons die, the body cannot replace them. When enough dopaminergic neurons die, dopamine production falls below the level the brain requires to properly control motor function, thus resulting in the motor symptoms of Parkinson's disease.

55. The presence of Lewy bodies (insoluble aggregates of a protein called alpha-

synuclein) in many of the remaining dopaminergic Neurons in the SNpc is another of the primary pathophysiological hallmarks of Parkinson's disease.

56. Dopaminergic neurons are particularly susceptible to oxidative stress, a disturbance in the normal balance between oxidants present in cells and cells' antioxidant defenses.

57. Oxidative stress is a major factor in—if not the precipitating cause of—the degeneration and death of dopaminergic neurons in the SNpc and the accumulation of Lewy bodies in the remaining dopaminergic neurons that are the primary pathophysiological hallmarks of Parkinson's disease.

Paraquat's Link to Parkinson's Disease

58. Paraquat is highly toxic to plants and animals.

59. Paraquat is designed to injure and kill plants by creating oxidative stress, which causes or contributes to cause the degeneration and death of plant cells.

60. Similarly, Paraquat injures and kills animals by creating oxidative stress, which causes or contributes to cause the degeneration and death of animal cells.

61. Paraquat creates oxidative stress in the cells of plants and animals because of “redox properties” that are inherent in its chemical composition and structure; it is a strong oxidant and readily undergoes “redox cycling” in the presence of molecular oxygen, which is plentiful in living cells.

62. The redox cycling of Paraquat in living cells interferes with cellular functions that are necessary to sustain life along with photosynthesis in plant cells and with cellular respiration in animal cells.

63. The redox cycling of Paraquat in living cells creates a “reactive oxygen species” known as a superoxide radical, an extremely reactive molecule that can initiate a cascading series of chemical reactions that creates other reactive oxygen species that damage lipids, proteins, and nucleic acids, which are molecules that are essential components of the structures and functions of living cells.

64. Because the redox cycling of Paraquat can repeat indefinitely in the conditions typically present in living cells, a single molecule of Paraquat can trigger the production of countless molecules of destructive superoxide radical.

65. Paraquat's redox properties have been known within the science community since at least the 1930s.

66. The same oxidation and redox potentials that make Paraquat highly toxic to plant cells and other types of animal cells make Paraquat highly toxic to nerve cells, including dopaminergic neurons, and create a substantial risk to all persons exposed to Paraquat.

67. The scientific community has known since the 1960s that paraquat is toxic to the cells of plants, animals, and humans because it creates oxidative stress through redox cycling.

68. The surfactants with which the concentrates containing Paraquat manufactured, distributed, and sold by Defendants, Defendants' corporate predecessors, and others with whom they acted in concert, were likely to increase Paraquat's toxicity to humans by increasing its ability to stay in contact with or penetrate the skin, mucous membranes, and other epithelial tissues, including tissues of the mouth, nose, nasal passages, trachea, conducting airways, the lungs, and the gastrointestinal tract.

69. Because Paraquat is highly poisonous, the form that is marketed in the United States has a blue dye to keep it from being confused with beverages such as coffee, a sharp odor to serve as a warning, and an added agent to cause vomiting if someone drinks it.

70. Paraquat is a "restricted use pesticide" under federal law, *see* 40 C.F.R. § 152.175, which means it is "limited to use by or under direct supervision of a certified applicator."

71. The same redox properties that make Paraquat toxic to plant cells and other types of animal cells make it toxic to dopaminergic neurons. That is, Paraquat is a strong oxidant that interferes with the function of dopaminergic neurons, damages those neurons, and ultimately kills them by creating oxidative stress through redox cycling.

72. Although Parkinson's disease is not known to occur naturally in any species other than humans, Parkinson's disease research is often performed using "animal models," in which

scientists use Paraquat to artificially produce the symptoms of Parkinson's disease in animal test subjects.

73. Paraquat is one of only a handful of toxins that scientists use to produce animal models of Parkinson's disease.

74. In animal models of Parkinson's disease, hundreds of studies involving various routes of exposure have found that Paraquat creates oxidative stress that results in the degeneration and death of dopaminergic neurons in the SNpc; other pathophysiology consistent with that seen in human Parkinson's disease; and motor deficits and behavioral changes consistent with those commonly seen in human Parkinson's disease.

75. Hundreds of *in vitro* studies (experiments in test tube, culture dish, or other controlled experimental environment) have found that Paraquat creates oxidative stress that results in the degeneration and death of dopaminergic neurons (and many other types of animal cells). Among those, the following are notable:

76. In 1994, Dr. Afonso Bainy published a study concluding that paraquat *in vitro* exposure led to an increment in the antioxidant capacity of the red blood cell.³

77. In 2002, Dr. Gabriele Schmuck published a study concluding that cortical neurons were found to be more sensitive towards paraquat toxicity than astrocytes as shown by MTT and Neutral Red assay, two different cytotoxicity assays.⁴

78. In 2019, Dr. Liyan Hou published a study showing that paraquat and maneb exposure induced ferroptosis, a form of regulated cell death, in SHSY5Y dopaminergic cells.⁵

79. Many epidemiological studies (studies of the patterns and causes of disease in defined populations) have found an association between Paraquat exposure and Parkinson's disease, including multiple studies finding a two to five-fold or greater increase in the risk of

³ Bainy, A.C. *et al.*, *Influence of lindane and paraquat on oxidative stress-related parameters of erythrocytes in vitro*, 13 Hum. & Experimental Toxicology 461 (1994).

⁴ Schmuck, G. *et al.*, *Oxidative stress in rat cortical neurons and astrocytes induced by paraquat in vitro*, 4 Neurotoxicity Resch. 1 (2002).

⁵ Hou L. *et al.*, *NADPH oxidase regulates paraquat and maneb-induced dopaminergic neurodegeneration through ferroptosis*, 1 Toxicology 64 (2019).

Parkinson's disease in populations with occupational exposure to Paraquat compared to populations without such exposure.

80. In June 2011, Dr. Caroline Tanner published a study examining whether pesticides that cause mitochondrial dysfunction or oxidative stress, including Paraquat, were associated with Parkinson's Disease or clinical features of parkinsonism in humans.⁶ The study found that Paraquat use plays a role in human Parkinson's Disease and that "[b]ecause paraquat remains one of the most widely used herbicide worldwide (Frabotta 2009), this finding potentially has great public health significance."⁷

81. In November 2012, Dr. Samuel Goldman published a study entitled "Genetic Modification of the Association of Paraquat and Parkinson's Disease."⁸ The study found that those who applied Paraquat and had the GSTT1*0 genotype were 11.1 times more likely to develop Parkinson's disease. Paraquat damages neurons by generating oxidative stress through redox cycling; the GSTT1 gene encodes an enzyme that prevents redox cycling. Around 20% of Caucasians do not have the GSTT1 gene and thus have the GSTT1*0 genotype. The lack of the GSTT1 gene may cause those with the GSTT1*0 genotype to be more vulnerable to Paraquat's redox cycling mechanism and therefore more likely to develop Parkinson's.

82. In July 2002, Dr. Alison McCormack published a study examining the effect of Paraquat on mice.⁹ The study found that Paraquat injections selectively kill dopaminergic neurons in the SNpc.

83. Dr. Robert Nisticó published a study in April 2011 that concluded that Paraquat causes the cell death of dopaminergic neurons within the substantia nigra, serotonergic neurons within the raphe nuclei, and noradrenergic neurons within the locus coeruleus.¹⁰ The researchers noted that Parkinson's pathology begins in the SNpc and "progressively involves noradrenergic

⁶ Tanner, Caroline M. *et al.*, *Rotenone, paraquat, and Parkinson's disease*, 119 *Environ Health Persp.* 866 (2011).

⁷ *Id.*

⁸ Samuel M. Goldman *et al.*, *Genetic Modification of the Association of Paraquat and Parkinson's Disease*, 27 *Mov. Disord.* 1652 (2012).

⁹ Alison L. McCormack *et al.*, *Environmental Risk Factors and Parkinson's Disease: Selective Degeneration of Dopaminergic Neurons Caused by the Herbicide Paraquat*, 10 *Neurobiol. Dis.* 119 (2002).

¹⁰ R. Nisticó *et al.*, *Paraquat- and Rotenone-Induced Models of Parkinson's Disease*, 24 *Int. J. Immunopathol Pharmacology* 313 (2011).

and serotonergic neurons within the locus coeruleus and raphe nuclei.”

84. In December 2011, Dr. Phillip Rappold published a study demonstrating how Paraquat entered dopaminergic neurons and killed the neurons through oxidative stress.¹¹ Paraquat converted to PQ⁺, which entered dopaminergic neurons through their dopamine transporters. PQ⁺ then also reacted with dopamine, which enhanced the Paraquat-induced oxidative stress. The researchers argued that dopaminergic neurons are more vulnerable to Paraquat because PQ⁺ reacts with dopamine to increase oxidative stress.

85. In November 2012, Dr. Pei-Chen Lee published a study examining the associations between traumatic brain injuries, Paraquat, and Parkinson’s disease.¹² The study found an association between Paraquat exposure and Parkinson’s.

86. In May 2013, Dr. Gianni Pezzoli published a meta-analysis examining seven studies on Paraquat exposure.¹³ The meta-analysis evaluated the seven studies together and separately evaluated the highest quality studies; in both analyses, those individuals exposed to Paraquat were more likely to develop Parkinson’s disease.

87. In a memorandum from March 2, 2016, recommending mitigation measures for Paraquat, the EPA acknowledged the numerous studies linking Paraquat to Parkinson’s disease stating, “[t]here is a large body of epidemiology data on paraquat dichloride use and Parkinson’s disease.”¹⁴

88. The kidney is the main organ responsible for paraquat excretion and Paraquat is known to be highly nephrotoxic. Dermal exposure to Paraquat has revealed inflammatory cell infiltration, tubular necrosis, and diffuse interstitial fibrosis.¹⁵ Paraquat causes toxic chemical reactions to occur in the kidneys, and long-term effects, including kidney failure, are possible.¹⁶

¹¹ Phillip M. Rappold *et al.*, *Paraquat Neurotoxicity is Mediated by the Dopamine Transporter and Organic Cation Transporter-3*, 108 Proc. Natl. Acad. Of Sci. U.S.A. 20766 (2011).

¹² Pei-Chen Lee *et al.*, *Traumatic Brain Injury, Paraquat Exposure, and their Relationship to Parkinson Disease*, 79 Neurology 2061 (2012).

¹³ Gianni Pezzoli & Emanuele Cereda, *Exposure to Pesticides or Solvents and Risk of Parkinson Disease*, 80 Neurology 2035 (2013).

¹⁴ Environmental Protection Agency, Paraquat Dichloride; Proposed Mitigation Decision (March 2, 2016), <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0855-0031>.

¹⁵ Tungsanga K, Chusilp S, Israsena S, Sitprija V., *Paraquat poisoning: evidence of systemic toxicity after dermal Exposure*, 59 Postgrad Med. J. 338 (1983).

¹⁶ Centers for Disease Control and Prevention, Facts About Paraquat,

89. Extensive exposure to Paraquat, like that experienced by Plaintiff, have been shown to more than double the risk of end stage renal disease.

90. Switzerland, where Syngenta AG maintains its headquarters, has not only prohibited the use of Paraquat since 1989 but recently amended the law on chemical substances to prohibit the export of Paraquat to help protect the health and environment in importing countries, particularly in the developing world.¹⁷

91. The Ministry of Agriculture of the People's Republic of China classifies Paraquat as extremely toxic. Paraquat's use or sale in China has been prohibited since September 1, 2020.¹⁸

92. Paraquat use has been banned in the European Union since 2007.¹⁹

93. The manufacture, formulation, and distribution of herbicides, such as Paraquat, are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"), 7 U.S.C. § 136 *et seq.* FIFRA requires that all pesticides be registered with the Environmental Protection Agency ("EPA") before their distribution, sale, or use, except as described by FIFRA 7 U.S.C. § 136a(a).

94. The EPA requires the registrant of a pesticide to conduct a variety of tests as part of the registration process to evaluate the potential for exposure to pesticides, toxicity to people and other potential non-target organisms, and other adverse effects on the environment.

95. Registration by the EPA is not an assurance or finding of safety. The determination the EPA makes in registering or re-registering a product is not that the product is "safe," but rather that use of the product in accordance with its label directions "will not generally cause unreasonable adverse effects on the environment." 7 U.S.C. § 136(a)(c)(5)(D).

<https://emergency.cdc.gov/agent/paraquat/basics/facts.asp>.

¹⁷ *Switzerland bans the export of five toxic chemicals, including paraquat*, MercoPress, Oct. 16, 2020, <https://en.mercopress.com/2020/10/16/switzerland-bans-the-export-of-five-toxic-chemicals-including-paraquat>.

¹⁸ Laura Wood, *2018 Market Research on Paraquat in China*, Associated Press, September 10, 2018, <https://apnews.com/press-release/pr-businesswire/0625d4cb368247b38ea803ff3842c203>.

¹⁹ *EU Court Reimposes Ban on Paraquat Weedkiller*, Reuters, July 11, 2007, <https://www.reuters.com/article/environment-eu-paraquat-dc/eu-court-reimposes-ban-on-paraquat-weedkiller-idUSL1166680020070711>.

96. FIFRA defines “unreasonable adverse effects on the environment” to mean “any unreasonable risk to man or the environment, considering the economic, social, and environmental costs and benefits of the use of any pesticide.” 7 U.S.C. § 136(bb). FIFRA thus requires the EPA to make a risk/benefit analysis in determining whether a registration should be granted or allowed to continue to be sold in commerce.

97. FIFRA generally requires that the registrant conduct health and safety testing of pesticides. The government is not required to, nor does it generally, perform the product tests that are required of the manufacturer.

98. Syngenta has long misrepresented and denied the harmful side effects of its Paraquat-based products.

99. In response to growing concern about the safety of Paraquat, Syngenta established a website at www.paraquat.com for the purpose of persuading the public that Paraquat is safe.

100. Syngenta’s statements proclaiming the safety of Paraquat and disregarding its dangers were designed to mislead the agricultural community and the public at large, including Plaintiff.

101. As of the filing of this Complaint, www.paraquat.com has been taken down by Syngenta.

102. Defendants knew or should have known that Paraquat was a highly toxic substance that can cause severe neurological injuries and impairment.

103. Defendants failed to appropriately and adequately test its Paraquat-based products to protect individuals like Plaintiff from the hazards of exposure to Paraquat.

104. Despite its knowledge that exposure to Paraquat was dangerous, Defendants continued to promote their Paraquat-based products as safe.

105. In fact, in 2003, when Syngenta was dealing with lawsuits regarding another toxic herbicide, atrazine, it was reported that “Sherry Ford, the communications manager, wrote in her

notebook that the company ‘should not phase out [atrazine] until we know about’ the Syngenta herbicide Paraquat, which has also been controversial, because of studies showing that it might be associated with Parkinson’s disease. She noted that atrazine ‘focuses attention away from other products.’”²⁰

106. Defendants’ failure to adequately warn Plaintiff resulted in: (1) Plaintiff’s exposure to Paraquat; and (2) scientists and physicians failing to warn and instruct the public, particularly those living in agricultural areas where Paraquat-based pesticides are heavily sprayed, about the risk of Parkinson’s disease with exposure to Paraquat.

107. By reason of the foregoing, Plaintiff, Mary Casteel, contracted Parkinson’s Disease and has been severely and permanently injured as a result of the exposure to Paraquat.

108. By reason of the foregoing acts and omissions, Plaintiff endured and suffered emotional and mental anguish, medical expenses, and other economic and non-economic damages, as a result of Defendants’ actions and inactions.

109. Plaintiff was regularly exposed to Paraquat as a result of direct exposure from mixing and spraying Paraquat while living on a farm where her husband and father used Paraquat based herbicides.

110. As a result of Plaintiff’s injuries, Plaintiff had incurred significant economic and non-economic damages.

111. Plaintiff was directly exposed to Defendants’ Paraquat products from approximately 1970 to 1990.

111. On numerous occasions, Paraquat came into contact with Plaintiff’s skin while mixing and spraying Paraquat.

112. During the entire time that Plaintiff was exposed to Paraquat, Plaintiff did not know that exposure to Paraquat, when handled according to the instructions, could be injurious

²⁰ Rachel Aviv, *A Valuable Reputation*, The New Yorker, Feb. 3, 2014, <https://www.newyorker.com/magazine/2014/02/10/a-valuable-reputation>.

to himself or others.

COUNT I
Negligence (All Defendants)

113. Plaintiff re-alleges each paragraph above as if fully set forth herein.

114. Defendants had a duty to exercise ordinary care in the designing, researching, testing, manufacturing, marketing, supplying, promoting, packaging, sale, and/or distribution of Paraquat products into the stream of commerce, including a duty to assure that the product would not cause those exposed to it to suffer unreasonable and dangerous side effects.

115. Defendants failed to exercise ordinary care in the designing, researching, testing, manufacturing, marketing, supplying, promoting, packaging, sale, quality assurance, quality control, and/or distribution of Paraquat products in that Defendants knew or should have known that persons foreseeably exposed to Paraquat products were placed at a high risk of suffering unreasonable and dangerous side effects, including but not limited to, the development of Parkinson's disease, as well as other severe and personal injuries that are permanent and lasting in nature; physical pain and mental anguish, including diminished enjoyment of life; and a need for lifelong medical treatment, monitoring, and medications.

116. The negligence by Defendants, their agents, servants, and/or employees, included but was not limited to the following acts and/or omissions:

- a. Manufacturing, producing, promoting, formulating, creating, and/or designing Paraquat products without thoroughly testing it;
- b. Failing to test Paraquat products and/or failing to adequately, sufficiently, and properly test Paraquat products;
- c. Failing to conduct sufficient testing to determine whether Paraquat products were safe for use, as Defendants either knew or should have known that Paraquat products were unsafe and unfit for use because of the dangers to those exposed to it;
- d. Failing to conduct sufficient testing and studies to determine Paraquat products' effects on human health even after Defendants had knowledge of studies linking Paraquat products to latent neurological damage and neurodegenerative disease, including Parkinson's disease;

- e. Failing to adequately and correctly warn the Plaintiff, the public, the medical and agricultural professions, and the EPA of the dangers of Paraquat products;
- f. Failing to provide adequate cautions and warnings to protect the health of persons who would reasonably and foreseeably be exposed to Paraquat products;
- g. Negligently marketing, advertising, and recommending the use of Paraquat products without sufficient knowledge as to its dangerous propensities;
- h. Negligently representing that Paraquat products were safe for use for its intended purpose when, in fact, it was unsafe;
- i. Negligently representing that Paraquat products had equivalent safety and efficacy as other forms of herbicides;
- j. Negligently designing Paraquat products in a manner that was dangerous to others;
- k. Negligently manufacturing Paraquat products in a manner that was dangerous to others;
- l. Negligently producing Paraquat products in a manner that was dangerous to others;
- m. Negligently formulating Paraquat products in a manner that was dangerous to others;
- n. Concealing information from Plaintiff while knowing that Paraquat products were unsafe, dangerous, and/or non-conforming with EPA regulations;
- o. Improperly concealing and/or misrepresenting information from Plaintiff, scientific and medical professionals, and/or the EPA, concerning the severity of risks and dangers of Paraquat products compared to other forms of herbicides; and
- p. Negligently selling Paraquat products with a false and misleading label.

117. Defendants under-reported, underestimated, and downplayed the serious dangers of Paraquat products.

118. Defendants were negligent in the designing, researching, supplying, manufacturing, promoting, packaging, distributing, testing, advertising, warning, marketing, and selling of Paraquat products in that Defendants:

- a. Failed to use ordinary care in designing and manufacturing Paraquat products so as to avoid the aforementioned risks to individuals when paraquat was used as an herbicide;

- b. Failed to accompany Paraquat products with proper and/or accurate warnings regarding all possible adverse effects associated with exposure to paraquat;
- c. Failed to warn Plaintiff of the severity and duration of such adverse effects, as the warnings given did not accurately reflect the symptoms or severity of the effects including developing Parkinson's disease;
- d. Failed to conduct adequate testing, clinical testing and post-marketing surveillance to determine the safety of Paraquat products;
- e. Misrepresented the evidence of paraquat's neurotoxicity; and
- f. Was otherwise careless and/or negligent.

119. Despite the fact that Defendants knew or should have known that Paraquat products caused or could cause unreasonably dangerous health effects, Defendants continued to market, manufacture, distribute, and/or sell Paraquat products to consumers.

120. Defendants knew or should have known that consumers like Plaintiff would foreseeably suffer injury as a result of Defendants' failure to exercise ordinary care.

121. Defendants' negligence was the proximate cause of Plaintiff's injuries, harm, and economic loss, which Plaintiff suffered.

122. As a result of the foregoing acts and omissions, Plaintiff suffered from permanent health issues, physical disability, and mental anguish including diminished enjoyment of life, as well as financial expenses for hospitalization and medical care.

WHEREFORE, Plaintiff respectfully requests that this Court enter judgment in Plaintiff's favor for compensatory and punitive damages to exceed a sum of \$75,000, together with interest, costs herein incurred, and all relief this Court deems just and proper.

COUNT II

Strict Products Liability: Design Defect (All Defendants)

- 123. Plaintiff re-alleges each paragraph above as if fully set forth herein.
- 124. At all times herein mentioned, Defendants designed, researched, manufactured,

tested, advertised, promoted, sold, and/or distributed Paraquat products as described above to which Plaintiff was exposed, including in the State of Illinois.

125. Paraquat products were expected to and did reach the usual consumers, handlers, and persons coming into contact with it without substantial change in the condition in which they were produced, manufactured, sold, distributed, and/or marketed by Defendants, including in the State of Illinois.

126. At those times, paraquat products were in an unsafe, defective condition that was unreasonably dangerous to users, and in particular, Plaintiff.

127. For many years, Plaintiff was exposed to Defendants' Paraquat products regularly and repeatedly for hours at a time resulting in regular, repeated, and prolonged exposure of Plaintiff to Paraquat.

128. The Paraquat products designed, researched, manufactured, tested, advertised, promoted, marketed, sold, and/or distributed by Defendants were defective in design or formulation in that, when they left the hands of the manufacturer and/or suppliers, the foreseeable risks exceeded the benefits associated with the design or formulation of the Paraquat products.

129. The Paraquat products designed, researched, manufactured, tested, advertised, promoted, marketed, sold, and/or distributed by Defendants were defective in design and/or formulation, in that, when they left the hands of Defendants or their manufacturers and/or suppliers, they were unreasonably dangerous, unreasonably dangerous in normal use, and they were more dangerous than an ordinary consumer would expect. On balance, the unreasonable risks posed by Paraquat products outweighed the benefits of their design.

130. At all relevant times, Paraquat products were in a defective condition, unsafe, and unreasonably dangerous, and Defendants knew or had reason to know they were defective and unsafe, especially when used in the form and manner as intended by Defendants. In particular, the Paraquat products were defective in the following ways:

- a. Paraquat products were designed, manufactured, formulated, and packaged such that when so used, Paraquat was likely to be inhaled, ingested, and absorbed into the bodies of persons who used them, while they were being used, or entered fields

or orchards where they have been sprayed or areas near where they had been sprayed; and

- b. when inhaled, ingested, or absorbed into the bodies of persons who used them, were nearby while they were being used, or entered fields or orchards where they had been sprayed or areas near where they had been sprayed, Paraquat was likely to cause or contribute to cause latent, permanent, and cumulative neurological damage, and repeated neurodegenerative disease, including Parkinson's disease to develop over time and manifest long after exposure.

131. Defendants knew or should have known that at all relevant times that their Paraquat products were in a defective condition and were (and are) unreasonably dangerous and unsafe and would create a substantial risk of harm to persons who used them, were nearby while Paraquat products were being used, or entered fields or orchards where Paraquat products had been sprayed or areas near where Paraquat products had been sprayed.

132. Armed with this knowledge, Defendants voluntarily designed their Paraquat products with a dangerous condition knowing that in normal, intended use, consumers such as Plaintiff would be exposed to it.

133. Plaintiff was exposed to Paraquat without knowledge of Paraquat's dangerous characteristics.

134. At the time of Plaintiff's exposure to Paraquat, Paraquat was being used for the purposes and in a manner normally intended, as a broad-spectrum pesticide.

135. The Paraquat products designed, researched, manufactured, tested, advertised, promoted, marketed, sold, and/or distributed by Defendants reached their intended users in the same defective and unreasonably dangerous condition in which it was manufactured.

136. Defendants designed, researched, manufactured, tested, advertised, promoted, marketed, sold, and/or distributed a defective product, which created an unreasonable risk to the consumer and to Plaintiff in particular, and Defendants are therefore strictly liable for the injuries sustained by the Plaintiff.

137. Plaintiff could not, by the exercise of reasonable care, have discovered Paraquat's defects identified herein or perceived Paraquat's danger.

138. Defendants are thus strictly liable to Plaintiff for the manufacturing, marketing, promoting, distribution, and/or selling of a defective product.

139. Defendants' defective design of Paraquat products amounts to willful, wanton, and/or reckless conduct.

140. As a direct and proximate result of the defects in Defendants' Paraquat products were the cause or a substantial factor in causing Plaintiff's injuries.

141. As a result of the foregoing acts and omissions, Plaintiff suffered from severe personal injuries that are permanent and lasting in nature, physical pain, and mental anguish, including diminished enjoyment of life, and financial expenses for hospitalization and medical care.

WHEREFORE, Plaintiff respectfully requests that this Court enter judgment in Plaintiff's favor for compensatory and punitive damages to exceed a sum of \$75,000, together with interest, costs herein incurred, and all relief this Court deems just and proper.

COUNT III

Strict Products Liability: Failure to Warn (All Defendants)

142. Plaintiff re-alleges each paragraph above as if fully set forth herein.

143. Defendants engaged in the business of selling, testing, distributing, supplying, manufacturing, marketing, and/or promoting Paraquat in the State of Illinois, and through that conduct, have knowingly and intentionally placed Paraquat into the stream of commerce with full knowledge that it reaches consumers such as Plaintiff who was exposed to it through ordinary and reasonably foreseeable uses.

144. Defendants did in fact sell, distribute, supply, manufacture, and/or promote Paraquat products. Additionally, Defendants expected the Paraquat they were selling, distributing, supplying, manufacturing, and/or promoting to reach Plaintiff without any substantial change in the condition of the product from when it was initially distributed.

145. At the time of manufacture, Defendants knew, or in the exercise of ordinary care, should have known that:

- a. Defendants' Paraquat products were designed, manufactured, formulated, and packaged such that it was likely to be inhaled, ingested, and absorbed into the bodies of people who used it, who were nearby when it was being used, or who entered fields or orchards where it had been sprayed or areas near where it had been sprayed; and
- b. when inhaled, ingested, or absorbed into the body, it was likely to cause latent neurological damage that was both permanent and cumulative, and that repeated exposures were likely to cause neurodegenerative disease, including Parkinson's disease.

146. At all relevant times, Defendants' Paraquat products were in a defective condition such that it was unreasonably dangerous to those exposed to them and was so at the time they were distributed by Defendants and at the time Plaintiff was exposed to and/or ingested the product. The defective condition of Paraquat was due in part to the fact that it was not accompanied by proper warnings regarding its toxic qualities and possible health effects, including, but not limited to, developing Parkinson's disease as a result of exposure. That defective condition was not a common propensity of the Paraquat products that would be obvious to a user of those products.

147. Defendants' Paraquat products did not contain a necessary warning or caution statement that, if complied with, would have been adequate to protect the health of those exposed in violation of 7 U.S.C. § 136j(a)(1)(E).

148. Defendants failed to include a necessary warning or caution statement that, if complied with, would have been adequate to protect the health of those exposed.

149. Defendants could have revised Paraquat's label to provide additional warnings.

150. This defect caused serious injury to Plaintiff, who was exposed to Paraquat in its intended and foreseeable manner.

151. At all relevant times, Defendants had a duty to properly design, manufacture, compound, test, inspect, package, label, distribute, market, examine, maintain supply, provide proper warnings, and take such steps to assure that the product did not cause users to suffer from unreasonable and dangerous side effects.

152. Defendants labeled, distributed, and promoted a product that was dangerous and

unsafe for the use and purpose for which it was intended.

153. Defendants failed to warn of the nature and scope of the health risks associated with Paraquat, namely its toxic properties and its propensity to cause or serve as a substantial contributing factor in the development of Parkinson's disease.

154. Defendants knew of the probable consequences of exposure to Paraquat. Despite this fact, Defendants failed to warn of the dangerous toxic properties and risks of developing Parkinson's disease from Paraquat exposure, even though these risks were known or reasonably scientifically knowable at the time of distribution. Defendants willfully and deliberately failed to avoid the consequences associated with its failure to warn, and in doing so, acted with conscious disregard for Plaintiff's safety.

155. At the time of exposure, Plaintiff could not have reasonably discovered any defect in Paraquat through the exercise of reasonable care.

156. Defendants, as manufacturers and/or distributors of Paraquat, are held to the level of knowledge of an expert in the field. There was unequal knowledge with respect to the risk of harm, and Defendants, as manufacturers of Paraquat products possessed superior knowledge and knew or should have known that harm would occur in the absence of a necessary warning.

157. Plaintiff reasonably relied on the skill, superior knowledge, and judgment of Defendants.

158. Had Defendants properly disclosed the risks associated with Paraquat, Plaintiff would have taken steps to avoid exposure to Paraquat.

159. The information that Defendants provided failed to contain adequate warnings and precautions that would have enabled users to use the product safely and with adequate protection. Instead, Defendants disseminated information that was inaccurate, false, and misleading and that failed to communicate accurately or adequately the comparative severity, duration, and extent of the risk of injuries associated with use of and/or exposure to Paraquat; continued to promote the efficacy of Paraquat, even after they knew or should have known of the unreasonable risks from exposure; and concealed, downplayed, or otherwise suppressed, through aggressive marketing

and promotion, any information or research about the risks and dangers of exposure to Paraquat.

160. To this day, Defendants have failed to adequately warn of the true risks of exposure to Paraquat, including the risks manifested by Plaintiff's injuries associated with exposure to Paraquat.

161. As a result of its inadequate warnings, Paraquat was defective and unreasonably dangerous when it left Defendants' possession and/or control, was distributed by Defendants, and when Plaintiff was exposed to it.

162. As a direct and proximate result, Plaintiff suffered from severe personal injuries that are permanent and lasting in nature, physical pain, and mental anguish, including diminished enjoyment of life, and financial expenses for hospitalization and medical care.

WHEREFORE, Plaintiff respectfully request that this Court enter judgment in Plaintiff's favor for compensatory and punitive damages to exceed the sum of \$75,000, together with interest, costs herein incurred, attorneys' fees and all relief as this Court deems just and proper.

COUNT IV

Breach of Implied Warranty of Merchantability (All Defendants)

163. Plaintiff incorporates by reference all of the above-stated paragraphs as though fully set forth therein.

164. At all relevant times, Defendants were engaged in the business of selling Paraquat products and was a merchant with respect to those products.

165. At all relevant times, Defendants intended and expected that Defendants' Paraquat products would be sold and used throughout the United States, including in the State of Illinois.

166. Defendants developed, manufactured, distributed, and sold Paraquat for use in formulating Defendants' Paraquat products, and developed, registered, formulated, and distributed Defendants' Paraquat products for sale in the United States, including the State of Illinois.

167. Plaintiff was exposed to Defendants' Paraquat products regularly and repeatedly, for hours at a time, resulting in regular, repeated, and prolonged exposure to Paraquat.

168. At the time of each sale of Defendants' Paraquat products that resulted in Plaintiff's exposure to paraquat, Defendants impliedly warranted that Defendants' Paraquat products were of merchantable quality, including that they were fit for the ordinary purposes for which such goods were used.

169. Defendants breached this warranty as to each sale of Defendants' Paraquat products that resulted in Plaintiff's exposure to Paraquat, in that Defendants' Paraquat products were not of merchantable quality because they were not fit for the ordinary purpose for which such goods were used by Plaintiff who was either in direct privity with Defendants through purchase of the Paraquat products or was an employee of the purchaser to whom the warranty was directly made and, therefore, an intended third-party beneficiary of such warranties.

170. As a direct and proximate result of the breaches of the implied warranty of merchantability by Defendants, Plaintiff suffered severe and personal injuries that were permanent and lasting in nature, physical pain and mental anguish including diminished enjoyment of life, and financial expenses for hospitalization and medical care.

WHEREFORE, Plaintiff respectfully requests that this Court enter judgment in Plaintiff's favor for compensatory and punitive damages to exceed the sum of \$75,000, together with interest, costs herein incurred, attorneys' fees and all relief as this Court deems just and proper.

JURY DEMANDED

Plaintiff hereby demands a trial by jury as to all claims in this action.

Date: 8/22/2024

Respectfully submitted,

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/s/ Patrick B. McAndrew

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